REMARKS

In this paper, claim 1 is currently amended, and claims 27-28 have been added. After entry of the above amendment, claims 1, 3-24 and 26-28 are pending, with claim 22 temporarily withdrawn from consideration, and claims 2 and 25 have been canceled.

New claims 27 and 28 read on the elected species (b).

Fig. 2 has been amended to attend to the objection made in the office action. More specifically, the dashed line that indicates the coupling of mounting axle (118) of positioning pawl (41) to base plate (22) has been extended to reach to opening (114).

Claims 1, 3-21, 23, 24 and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable by Troiano (US 6,105,459) in view of Liu, et al (US 6,497,163). This basis for rejection is respectfully traversed.

Claim 1 has been amended to clarify that the second engaging member moves in a first direction and in a second direction opposite the first direction, wherein the biasing force is always applied to the first engaging member as the second engaging member moves through the entire range of operating movement of the second engaging member in the first and second directions.

In view of the amendments made to date, the applicant hereby disclaims all prior statements made in prior attempts to distinguish over the prior art, and the examiner should consider the prior art anew based on the existing claim language without reliance on any prior statements made by the undersigned.

Troiano discloses a parking brake actuator for a vehicle. The parking brake actuator comprises a fixed structure (24), a cable actuator (20) pivotably mounted to fixed structure (24) through a shaft (26), a pawl shaft (31) attached to fixed structure (24), a pawl member (32) that includes a slot (36) for slidably receiving pawl shaft (31) therein so that pawl member (32) can rotate and translate relative to pawl shaft (31), a release lever (46) pivotably mounted to fixed structure (24) through a release shaft (47), a release actuator (19) slidably mounted to fixed structure (24) for

controlling the pivoting of release lever (46), and a spring (45) that biases release actuator (19) to a home position. Another spring (40) applies a clockwise biasing force to pawl member (32) in Fig. 2. Pawl member (32) includes a pawl tooth (34) that engages selected ones of a plurality of pawl teeth (30) disposed on cable actuator (20).

The office action refers to the positions of the parking brake actuator shown in Figs. 3 and 4. Figs. 3 and 4 show how the parking brake actuator is operated to set the parking brake. When the user rotates cable actuator (20) counterclockwise as shown in Fig. 3, a cam portion (48) of release lever (46) engages a follower portion (50) of pawl member (32) slightly above the lower tip of follower portion (50), thereby applying a counter-clockwise biasing force to pawl member (32) at a first biasing location. When cable actuator (20) is in the position shown in Fig. 4 (the brake set position), cam portion (48) of release lever (46) engages follower portion (50) of pawl member (32) at the lower tip of follower portion (50), thereby applying a counter-clockwise biasing force to pawl member (32) at a second biasing location.

Fig. 5 shows how the parking brake is released. During this time, the user pulls release actuator (19), thereby removing the biasing force of spring (45) from pawl member (32). As a result, the clockwise biasing force of spring (40) causes pawl member (32) to rotate clockwise, thereby disengaging pawl tooth (34) of pawl member (32) from pawl teeth (30) of cable actuator (20) and allowing cable actuator (20) to rotate clockwise to the brake-released position. Since the biasing force of spring (45) is removed from pawl member (32) during this time, the biasing force is not always applied to the first engaging member as the second engaging member moves through the entire range of operating movement of the second engaging member in the first and second directions as recited in claim 1.

Liu, et al discloses a dual-rod speed change control device comprising a base (10), a wire hub seat (20), an advancing member (30), and a withdrawing member (40). Wire hub seat (20) slides linearly on base (10) and connects to a cable end bead of a guide wire (A). Wire hub seat (20) includes an upper plate (21) and a lower plate (22). Upper plate (21) includes a plurality of ratchet teeth (27) on one side. Lower plate (22) includes a plurality of ratchet teeth (25) along one side and a plurality of ratchet teeth (26) on an opposite side.

Advancing member (30) comprises an advancing dial rod (32) that rotatably supports an advancing pawl (35), wherein advancing pawl (35) is biased counterclockwise in Fig. 2 by a torsion spring (36). Advancing dial rod (32) is biased in a clockwise direction by a spring (33). Advancing pawl (35) engages selected ones of the plurality of ratchet teeth (25) on lower plate (22) of wire hub seat (20) when advancing dial rod (32) is rotated counterclockwise, thereby moving wire hub seat (20) to pull guide wire (A). However, when advancing dial rod (32) is disposed in the inactivated or home position shown in Fig. 3, advancing pawl (35) is maintained out of engagement with the plurality of ratchet teeth (25) by pin (111).

Withdrawing member (40) comprises a locating ratchet pawl (42) and a withdrawing dial rod (45). Locating ratchet pawl (42) is pivotably mounted to base (10) and is biased in a clockwise direction in Fig. 2 by a spring (43). Locating ratchet pawl (42) engages selected ones of the plurality of ratchet teeth (27) on upper plate (21) of wire hub seat (20) to retain wire hub seat (20) in a selected position. Withdrawing dial rod (45) includes a push portion (451) and a retaining portion (452), wherein retaining portion (452) engages selected ones of the plurality of ratchet teeth (26) on lower plate (22) of wire hub seat (20). Withdrawing dial rod (45) is biased in a counterclockwise direction by a spring (46). When withdrawing dial rod (45) is rotated clockwise, push portion (451) disengages locating ratchet pawl (42) from ratchet teeth (27), and retaining portion (452) engages one of the plurality of ratchet teeth (26) on lower plate (22) of wire hub seat (20). At that time, wire hub seat (20) moves to slightly release guide wire (A). When withdrawing dial rod (45) is rotated in the counterclockwise direction back to the home position, retaining portion (452) disengages from ratchet teeth (26) on lower plate (22) of wire hub seat (20), and locating ratchet pawl (42) again engages with one of the plurality of ratchet teeth (27) on upper plate (21) of wire hub seat (20). At that time, wire hub seat (20) moves to complete the releasing of guide wire (A).

The office action interprets advancing pawl (35) to be a first engaging member, and the office action interprets lower plate (22) of wire hub seat (20) to be a second engaging member. However, Liu, et al neither discloses nor suggests changing a location of the application of the biasing force from a first biasing location on the first engaging member (35) to a different second biasing location on first engaging member (35) as recited in claim 1.

Thus, neither Troiano nor Liu, et al discloses or suggests the subject matter recited in claim 1.

Claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over Liu, et al in view of Shimano (US 4,343,201). This basis for rejection is respectfully traversed.

As noted above, Liu, et al neither discloses nor suggests changing a location of the application of the biasing force from a first biasing location on the first engaging member (35) to a different second biasing location on first engaging member (35) as recited in claim 1.

Prior to the speed control device disclosed in the Shimano reference, the control lever was maintained in the various gear positions solely through friction between the control lever and the supporting member. Since derailleurs typically use "return springs" that bias the derailleur pulleys from the larger-diameter sprockets (the lower speed sprockets) to the smaller-diameter sprockets (the high-speed sprockets), the friction needed to be large enough to hold the control lever in the various gear positions against the biasing force of the derailleur return spring. As a result, when the rider desired to move the control lever from the high speed position to the low speed position (against the biasing force of the derailleur return spring), the rider needed to apply a force to the control lever that was the sum of the biasing force of the derailleur return spring and the large frictional force between the control lever and the supporting member. Even when the rider wanted to move the control lever from the low speed position to the high speed position (in the same direction as the biasing force of the derailleur return spring), the rider still needed to apply a force to the control lever that was large enough to overcome the frictional force. The speed control device disclosed in the Shimano reference reduces the force needed to operate the control lever in both directions.

Shimano discloses a speed control device comprising a control lever (4) rotatably mounted to a supporting member (3). A ball (34) and spring (35) are mounted in a holder (36) of supporting member (3) so that ball (34) is biased against a click plate (45) mounted to a boss (42) of control lever (4).

A retaining mechanism (5) retains control lever (4) at a position corresponding to each of two desired speed stages of a derailleur (not shown). Retaining mechanism (5) comprises a ball (51)

disposed within a bore (48) in control lever (4), wherein ball (51) selectively engage an engaging recess (37) formed in support member (3). An arm (52) is pivotably mounted to control lever (4) through a pivot shaft (53), wherein arm (52) includes a bore (52a) on one end and a finger tab (52b) on the other end. Bore (52a) selectively receives ball (51) therein. A spring (54) biases arm (52) clockwise in Fig. 4, out of alignment with ball (51) as shown in Fig. 5.

Fig. 5 shows retaining mechanism (5) when control lever (4) is in the low speed position, and Fig. 6 shows retaining mechanism (5) when control lever (4) is in the high speed position. As shown in Fig. 5, when control lever (4) is in the low speed position, ball (51) is disposed in engaging recess (37) of supporting member (3), and ball (51) is disposed away from bore (52a) in arm (52). As a result, control lever (4) is firmly held in the low speed position against the biasing force of the derailleur return spring.

When the rider desires to move control lever (4) from the low speed position shown in Fig. 5 to the high speed position shown in Fig. 6, the rider presses finger tab (52b) to rotate arm (52) against the biasing force of spring (54) so that bore (52a) aligns with ball (51). As a result, ball (51) easily moves out of engaging recess (37) in supporting member (3) and into bore (52a) in control lever (4), thereby allowing control lever (4) to move to the high speed position with a light touch aided by the derailleur return spring.

When the rider desires to move control lever (4) from the high speed position shown in Fig. 6 back to the low speed position shown in Fig. 5, the rider pulls control lever (4) until ball (51) drops back into engaging recess (37) in supporting member (3) and spring (54) rotates arm (52) so that bore (52a) is out of alignment with ball (51), thereby maintaining control lever (4) firmly in the low speed position.

The office action alleges that Shimano teaches a biasing mechanism (34, 35) that applies a basing force to bias an engaging member (45) at different locations so that a rider may operate the bicycle shift control device (Figs. 1-3) with a light touch for changing the bicycle speed. However, it is Shimano's retaining mechanism (5) that allows lever (4) to be operated with a light touch, not biasing mechanism (34, 35). Biasing mechanism (34, 35) is *not* an indexing mechanism. Biasing

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mechanism (34, 35) is provided solely to provide an audible indication that control lever (4) is being rotated by the rider. In fact, biasing mechanism (34, 35) *adds* frictional forces to lever (4), thereby *increasing* the amount of force required to operate lever (4). Furthermore, the biasing force provided to click plate (engagement member) (45) is constant and does not change any engagement force between click plate (45) and lever (4).

Thus, neither Liu, et al nor Shimano discloses or suggests the subject matter recited in claim 1.

As for claim 27, none of the prior art discloses or suggests a varying engaging force between first and second engaging members wherein only a biasing force that biases the first engaging member towards the second engaging member is applied to the first engaging member. As for claim 28, none of the prior art discloses or suggests at least one of a first biasing location or a second biasing location being positioned between an axle coupled to a first engaging member and the location where the first engaging member engages a second engaging member.

Accordingly, it is believed that the rejections under 35 U.S.C. §103 have been overcome by the foregoing amendment and remarks, and it is submitted that the claims are in condition for allowance. Reconsideration of this application as amended is respectfully requested. Allowance of all claims is earnestly solicited.

Respectfully submitted,

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